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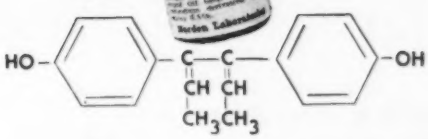

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Rogoff, George, Phthalylsulfacetamide in Veterinary Medicine, Jauma (Sept. 1950)
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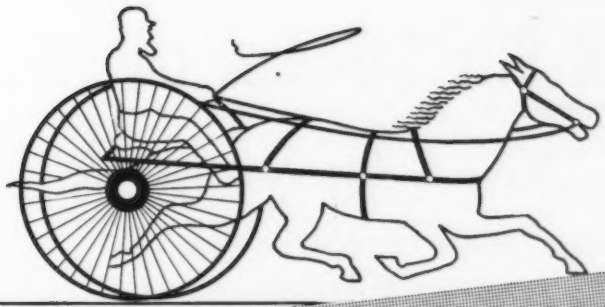

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Mires, M. H.: Nitrofurazone—A Practical Antibacterial Agent for Bovine Mastitis, J. Am. Vet. M. A. 117:49 (July) 1950.

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Kakavas, J. C., Roberts, H. D. B., de Courcy, S. J., Jr. and Ewing, D. L.: Chemotherapy of Bovine Mastitis with Furacin and Penicillin Mixture J. Am. Vet. M. A. 119:203 (September) 1951.

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RESEARCH DEPARTMENT

FELINE PNEUMONITIS IN CALIFORNIA

By D. G. McKERCHER, D.V.M., Ph.D., and JOSEPH K. SAITO, *Laboratory Technician, School of Veterinary Medicine, University of California, Davis, California.*

NOTE: *The writers wish to express their appreciation to Dr. Ernestine Payen of Sacramento for her kind cooperation in providing certain clinical material for this study.*

While feline pneumonitis is a condition which has undoubtedly existed for a long time, it was first recognized as a specific disease entity by Baker[1] in 1942. He showed the etiological agent to be a large elementary body virus which subsequently was identified as a new member of the psittacosis-lymphogranuloma group of agents.[2]

Cats of all ages are affected but the condition is more severe in young than in older animals. The early stage of the disease is characterized by moderate fever, a marked rhinitis and violent sneezing, and a bilateral conjunctivitis accompanied by a profuse watery discharge which ultimately becomes mucopurulent in nature. There is no change in the blood picture and the mortality is nil, two features which readily differentiate feline pneumonitis from panleucopenia. The acute symptoms subside in from several days to a week and although the animals may lose considerable weight, recovery occurs usually from several weeks to months following infection. Clinically recovered animals frequently remain carriers and, in common with certain of the diseases produced by this group of viruses, are, under adverse circumstances, subject to periodic relapses. In contrast to the condition in older animals, the disease in young kittens frequently terminates fatally in pneumonia which involves the anterior lobes of the lungs.

Heretofore feline pneumonitis has been diagnosed etiologically in the states of New Jersey and New York only. Its presence in California was suspected, however, on the basis of reports by practitioners concerning a relatively common condition in cats which clinically appeared to be identical with this disease. In an effort to establish the relationship, if any, between this condition and feline pneumonitis, an attempt was made to isolate an elementary body agent or agents from these cats so that any recovered therefrom could be compared with Baker's feline pneumonitis virus. Because of the possible existence of asymptomatic carriers, clinically normal appearing cats were included in the survey. Whenever possible a blood sample for serological studies was drawn at the time material was obtanied for isolation purposes.

Methods and Results

Isolation Procedures

Albino Swiss mice weighing from 15 to 20 grams each from stock shown to be free of latent lung infections of elementary body etiology, were used throughout in this study. Ocular and nasal washings, or a turbinate bone suspension in the case of cats for disposal, were inoculated intranasally, each mouse receiving 0.05 cc. of inoculum while under light ether anesthesia. Seven days later the mice were sacrificed and the lungs examined macroscopically for pneumonia. Those in which pneumonia was observed were examined further by preparing impression smears from the cut surfaces of the consolidated areas which were stained according to Macchiovello's method[3] and then examined for the presence of elementary bodies. In most cases at least two, and sometimes three, serial mouse lung passages were made to confirm either the absence or presence of virus.

Following this procedure, an elementary body agent which was, in all cases, morphologically and tinctorially identical with Baker's strain of virus was recovered from six of the 49 animals thus examined. All six either manifested respiratory involvement at the time or had a previous history of such.

After each of the strains had been established in mouse lung, a representative one was adapted to growth in the yolk sac of five- to seven-day-old embryonated hens' eggs. The yolk sac propagated virus, which is subsequently referred to as the virus isolate, was then compared serologically with Baker's virus and tested for its pathogenicity for kittens.

Serological Procedures

Yolk sac antigens in a dilution of 1-64 of both the virus isolate and the Baker strain of feline pneumonitis virus each fixed complement in the presence of feline pneumonitis antiserum. No fixation occurred in any dilution when these antigens were tested against

[1]Baker, J. A., 1942: A Virus Obtained from a Pneumonia of Cats and Its Possible Relation to the Cause of Atypical Pneumonia in Man; *Science*, 96; 475-476.

[2]Thomas, L., and Kolb, E. M., 1943; Relationship of the Virus of Cat Pneumonia (Baker) to the Psittacosis-lymphogranuloma Group of Agents. Proc. Soc. Exper. Biol. & Med.; 54: 172-174.

[3]Macchiavello, A.: Cited by H. Zinsser in Virus and Rickettsial Diseases, Harvard University Press, Cambridge, 1940, 896.

normal cat serum. The sera of three cats, from each of which an elementary body agent was recovered, were tested for complement fixing antibodies in the presence of two units of each of the above antigens with results which are shown in the following table. Unfortunately, the cat from which the virus isolate was recovered, was one of the three from which serum was not obtained. The sera of 26 cats which appeared clinically normal at the time specimens were drawn were found to be devoid of complement fixing antibodies for the Baker strain of feline pneumonitis virus.

Showing Serological Relationship of Three Recovered Viruses to the Virus Isolate and to the Baker Strain of Feline Pneumonitis Virus

Cat Number	Symptoms of Feline Pneumonitis	Isolation of Elementary Body Agent	Complement Fixing Titer of Serum with Virus Isolate	Complement Fixing Titer of Serum with Baker's Feline Pneumonitis Virus
32	Yes	Yes	1-32	1-32
33	Yes	Yes	1-16	1-32
35	Yes	Yes	1-32	1-32

Pathogenicity Studies

The pathogenicity of the virus isolate propagated in yolk sac was tested in six- to eight-week-old kittens which were shown, by the procedure previously described, to be free of latent lung infection of elementary body etiology. The animals were each inoculated, while under light ether anesthesia, with 0.25 cc. of an infectious yolk sac suspension containing numerous elementary bodies, and observed subsequently for signs of the disease.

From three to four weeks following inoculation, five of the seven kittens developed typical symptoms of feline pneumonitis and virus was recovered in all cases. The two cats which failed to exhibit clinical infection were older than the rest and virus was not recovered from either.

Summary

Forty-nine cats of various ages were examined during the course of a survey designed to determine whether feline pneumonitis exists in the State of California. Six cats obtained from different localities in the Sacramento and the San Joaquin Valleys, five of which manifested respiratory symptoms of varying degrees of intensity at the time, yielded an elementary body agent from the respiratory tract which was found in all cases to be morphologically and tinctorially identical with the feline pneumonitis virus of Baker. Furthermore, of the four strains tested, all were identified serologically with this virus which was used as the reference strain throughout. A representative isolate produced typical symptoms of pneumonitis in experimentally inoculated kittens and in all instances the virus was recovered from these animals.

Evidence is thus presented which permits the conclusion that feline pneumonitis currently exists in California. Based on the distribution of the localities from which the infected cats were obtained, indications are that the disease is prevalent throughout the state.

Successful Examinees

The following have passed the examination in veterinary medicine in Los Angeles, June, 1951:

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Veterinarians' Banquet Scheduled for Tonight
Expert to Speak On Brucellosis
Hurt Made Life Member Of Association
Veterinarians Hold Annual Meeting
Veterinarians Close Parley
Dr. W. J. Zontine Elected Officer in Veterinary Group
Compulsory Vaccination of Dogs Will Be Asked
Dr. Brown Attends Veterinary Meeting
Dr. Brown Attends Veterinary Meeting
To Speak at State Meeting
300 Veterinarians Welcomed by Mayor At Conclave Opening
Veterinarians to Meet Tomorrow
SANITATION NEED ON FARMS STILL THE BIGGEST ITEM
Dr. Mrs. Boll Attend Veterinary Meeting
Veterinarians Attend Meeting
Veterinary Association Meets in Santa Barbara
Dr. Scofield Attends Veterinary Meeting
Local Doctor Named President
Veterinary Group Names McCapes
NEW OF LEADERS AT VETERINARIAN ASSN. MEET
Look Past Brucellosis
Dr. S. M. Dingwell Appointed to Committee
Santa Barbara Meet Attended By Hanfordites
Local Veterinarians At State Meet
Compulsory Vaccination Of Dogs Suggested
Dr. J. H. Miller Attends Convention

LARGE ANIMALS DEPARTMENT

California Is Out-Flanking Brucellosis*

By ARTHUR G. BOYD, D.V.M., *Assistant Chief, California Division of Animal Industry*

In keeping with the theme of the excellent motion picture, "The Triple Threat of Brucellosis," produced by the United States Bureau of Animal Industry and shown here today, I have chosen as the title of my remarks "California Is Out-Flanking Brucellosis."

The plan of attack against this disease is to continue to wear-down the enemy through calf-hood vaccination so that the big push to reach our goal can be achieved with a minimum of disruption of and a maximum benefit to the industries involved, and the public.

The close of this month marks the completion of three and one-half years of vaccination of calves between the ages of six and twelve months with Strain 19 vaccine in the cooperative federal-state brucellosis control program in California.

Even before the incidence of tuberculosis in cattle in this state was reduced to less than one-half of one per cent in 1940, the dairy industry had an active Statewide Brucellosis Committee.

In 1930 the Division of Animal Industry of the State Department of Agriculture offered a voluntary program of brucellosis control to dairymen which was based on the blood test and segregation method.

In 1941 the goat industry of California, realizing that their animals were free of brucellosis, had certain restrictions placed in the law to protect them from the introduction of brucellosis by animals imported from other states. It is pleasing to be able to report that, to the best of our knowledge, brucellosis does not exist among our goat herds.

The swine raisers of this state also have taken action to halt the inroads of brucellosis among their herds. In fact, in this field they are among the first and one of the few to adopt a program. The State Department of Agriculture in 1945 offered a voluntary brucellosis program to this group, based on blood testing of the herds and segregation of clean animals.

In reviewing this brief history of the attention given to brucellosis by various groups of California's livestock industry, I have in mind to show that it has been given much consideration by our livestock people and has been recognized not as a one species disease or problem.

With special emphasis on brucellosis among cattle we find that the early voluntary blood testing program, while very helpful in ridding some herds of this disease, did not become too popular mostly for three reasons:

1. The herd, while clean, was still highly susceptible and exposures were continually taking place.

2. After disposal of large numbers of cattle in connection with the tuberculosis program, it was not practicable to eliminate large numbers of cattle reacting to the blood test for brucellosis.

3. Research and demonstrational work on vaccination by our University workers was meeting with good success and appealing to many dairymen.

In 1947 the Legislature was asked to include in the Agricultural Code the present plan of calf vaccination. Through this program great gains have been made in bringing up a young cattle population with a relatively high degree of immunity against brucellosis.

Since the program started on January 2, 1943, until the close of last month, 823,333 calves have been vaccinated. Of these 594,139 were dairy calves and 229,194 were beef calves. After a few more years of calf-hood vaccination and with the replacement of older cattle, the accomplishments in the control of this disease should become increasingly evident. All of this has been done without any legal action which is an indication that the program is acceptable to livestock producers.

Some 275 accredited practicing veterinarians hold contracts with the state for conducting the actual vaccinations. As provided by law the state has entered into a cooperative agreement with the United States Bureau of Animal Industry which provides that the federal government will lend certain assistance and specifies that the program will be conducted under one of the plans recommended by the United States Livestock Sanitary Association.

While the vaccination of beef calves is optional with the owner, it is interesting to note the increasing number of requests received from beef cattle producers. The approach to the brucellosis problem on the part of many cattle producers has been somewhat in the nature of a crop insurance undertaking. This is especially the case on the part of many beef cattlemen who believe it is a good investment to minimize the chances of losing their calf crop. In some areas calf vaccination against brucellosis is considered good business and an essential part of beef production.

While the accomplishments to date have been most gratifying, we should be mindful that much hard work lies ahead in dealing with this disease. We, therefore, must be thinking of future steps to take in our con-

*Presented June 26, 1951, at the 63rd Annual Convention of the California State Veterinary Medical Association.

tinual attack on brucellosis. We must realize that we are confronted with no simple challenge but one of considerable complexity, requiring the combined effort of all interests involved.

There is much more to brucellosis control than the mere "shooting" of vaccine. It should be clear that other aspects of the problem, which the veterinarian is best equipped to handle, must be dealt with. You are looked to for help by the livestock industry and the public. Brucellosis control is a real test of the veterinary profession.

I am sure you will agree that half-way methods, postponements, and evasions will lead only to failure in dealing with a disease like brucellosis. Reward or financial gains must not be the only consideration. Selfish desires, if we are to succeed, must be put aside.

We endeavor to handle our relations with the contract veterinarian on the professional basis to which he is entitled. In turn, he is expected to understand that the Legislature has given the State Division of Animal Industry a job to administer and that results are expected.

We have minimized the amount of paper work in the program and have kept the number of forms to be submitted by contract veterinarians down to two. Notwithstanding this, some have been negligent in forwarding these necessary reports, causing some clients inconvenience and making the work of state officials more difficult. We have found that some practitioners are negligent with records; however, it must be appreciated that where state funds are involved certain reports are a "must."

There is indication for some improvement in tattooing calves. A tattoo is only as good as the care that is taken to apply it. It has been shown that good tattooing can be accomplished with present materials if the human factor doesn't fall down.

The matter of greater coverage of eligible calves has improved, particularly during the past six months. I am sure that in time even greater progress will come about.

We plan to have increasingly closer relationship between the state district offices and contract veterinarians located within the areas they serve. More attention will be given to delinquents and new herds. It is hoped that improvement in the over-all supervision of the program can be brought about soon.

Preliminary studies to evaluate the calf vaccination program recently have started in Humboldt County through the use of the ring, or ABR test. While it is too early to draw any definite conclusions, we are impressed with the possibilities of this test and are hopeful that we will gain helpful information through its use. Reports indicate that this test probably may be used to advantage on individual cattle to assist in differentiating titers due to natural infection and those due to vaccination. Preparatory work with this test was undertaken in Humboldt County because supervised vaccination was started there under county ordinance several years prior to the present federal-state calf vaccination program.

Increased attention is now being given to abortions which occur in vaccinated herds. The laboratories of the Division of Animal Industry at Sacramento and San Gabriel are now prepared to render assistance to veterinarians in such cases. A little later the laboratory at Fresno will give this service. However, before specimens are forwarded to the laboratories the District Veterinarian should be first advised of these cases.

Consideration is being given to regulations intended to expedite the control of brucellosis in the market milk areas of California where large numbers of replacements are shipped in from other places. This is a situation that must be dealt with if continued progress is to be made and the gains achieved are to be protected.

Most of those engaged in this undertaking want to make the program a success. As in the case of any work of such scope, there will be those who will get out of line and interfere with the orderly conduct of affairs. Time has helped to iron out most of these difficulties.

Increasing pressure from the public health standpoint in some parts of the country is of concern, especially to the market milk producers. The trend in this respect makes it apparent that the going is to be tougher and rougher, especially if ordinances like that of Chicago start spreading rapidly. We should join in assisting in meeting the situation in a wise and practical manner.

The contract veterinarians' committees are playing a necessary and helpful part. It is pleasing to know that a practitioner recently has been made a member of the Statewide Committee on Brucellosis which heretofore has been made up of industry representatives.

Our experience in the past three and one-half years has taught us much that should assist in the task ahead. My faith that the veterinary profession would come through and carry the ball was more than confirmed by the fine impression made at the hearings at which you recently presented your case when the question of lay vaccinators was involved. This was a fine job of public relations and I am prompted to suggest that it might be well to give careful consideration to more work along this line.

NOTE: Since the above article was presented at the June meeting, figures relating to the calf vaccination program for the past fiscal year ending June 30, 1951, indicate that there were 292,245 calves vaccinated. Since the program started on January 2, 1948, there has been a total of 844,781 calves vaccinated. During the six-month period, January 1-June 30, 1951, there were 32,794 more calves vaccinated than any other six months since the program started.

The Increasing Importance of Blood Groups in Livestock Production

By CLYDE STORMONT, Ph.D., *School of Veterinary Medicine, University of California, Davis, California*

Much of the increase in blood-group research during recent years stems from the discovery of the Rh blood-group-system of man in 1940 and the observation shortly thereafter that the Rh antigens are critically involved in hemolytic disease (erythroblastosis fetalis) of the newborn. This disease is now known to occur naturally in one other species, namely, the horse, and has been experimentally induced in such species as the dog and the chicken. The naturally occurring cases follow as a consequence of transplacental isoimmunization of the mother by antigens contained in the erythrocytes of the fetus. The main features leading up to this disease are presumably much the same in both man and the horse. These are briefly reviewed.

The primary etiological agents of hemolytic disease are genes, namely, genes controlling antigens of the red blood cells. Not all the known antigens of erythrocytes are involved. For example, in man the Rh antigens account for at least 90 per cent of the cases while those of the M-N system may never be involved. While little is known, or has been published, concerning blood-group-systems of the horse, it is relatively certain that at least two different antigens are responsible for transplacental isoimmunization of the mare.

The antigens of the fetus responsible for isoimmunization of the mother are inherited from the male parent. This is definitely established in man and logically implied in the case of the horse. Where mother-fetus incompatabilities in the proper antigens exist, it is only 1 out of 20 to 1 out of 50 cases in man in which hemolytic disease of the newborn is manifested. The disease is very rare in first pregnancies of women and this is probably mainly because it takes two or more incompatible pregnancies to bring the antibodies up to a level sufficient to damage the erythrocytes of the fetus. Again, this information concerning the horse has not as yet been obtained.

Just how transplacental-isoimmunization is effected is not known. It is implied that some erythrocytes of the fetus manage to get across the placental barrier into the blood stream of the mother. In man this would not seem impossible, since only one layer of tissues separates maternal and fetal blood during the later part of gestation. In the horse, however, there are six layers of tissue separating maternal blood from fetal blood.

The human placenta is permeable to antibodies. As a consequence, Rh antibodies engendered in the mother reach the fetal circulation prior to birth, resulting in anything from stillbirths to mildly afflicted newly born infants. The horse placenta is not permeable to maternal antibodies. As a consequence, foals of isoimmunized mares are born without manifestation of the disease and only develop the characteristic symptoms following ingestion of colostrum. The gut of the newborn of several species, including the horse and the dog, is permeable to antibodies contained in colostrum only for a short period (some 20 or more hours) of post-partum life.

The isoimmune antibodies directed against the erythrocytes of the fetus attack and destroy these cells more rapidly than they can be formed, with consequent sequlae often resulting in death. Jaundice, hemoglobin present in either or both the blood serum and urine, lethargy, etc., are characteristic symptoms. Bacterial septicemia of newly born foals may successfully mimic the cases due to isoimmunization of pregnancy.

Transfusion therapy is recommended and has been successful in the treatment of the human infant. The author is not aware of any example in which this procedure has been credited with saving a foal. The disease has been prevented in experimental horses by transferring foals from isoimmunized mares to foster mothers, or bottle-feeding the foal through the critical period in which its gut is permeable to antibodies contained in the colostrum. Such procedures will possibly become applicable in the field if and when diagnostic tests become available for general use. In the writer's opinion much more needs to be learned about blood-group-systems of the horse and the causative antigens of hemolytic disease in this species before reliable diagnostic tests can be made. Such projects have not been of a short-term nature in any of the species studied so far.

A study of the blood-group-systems of cattle was started in the late 1930s at the University of Wisconsin under the direction of Dr. M. R. Irwin. Reports concerned with the various blood-group-systems of cattle are just now getting into print. The earlier reports were concerned largely with the development of isoimmune antisera in cattle and the isolation of blood-typing reagents from these antisera.

Over 40 different bovine blood-typing reagents have been developed and these recognize antigens in nine different blood-group-systems. The blood-typing and blood-grouping picture in cattle is complex, to say the least. It is estimated that over a million different blood types are possible in this species.

It is emphasized that the bovine blood-grouping project was begun with no immediate practical application in mind. Along the way, however, several applications became apparent. At least one of these (the use of

these tests in parentage problems) has become so useful that this work is presently being supported in part by the Dairy Breed Associations. Several of these applications are briefly described:

1. *The identification of individual animals by means of blood types.*—Identical blood types have been rarely encountered among samples of cattle blood selected at random. On several occasions, however, it was possible to demonstrate that numerous blood samples sent into a particular laboratory for tests in connection with the brucellosis program have been obtained from a single donor; in each instance a brucellosis-negative individual. It was not necessary to trace these samples to the individual cow from which the blood samples had been drawn, since the responsible parties, when confronted with the evidence, admitted their guilt. Other application of these tests along similar lines are conceivable and will no doubt be used from time to time.

2. *The use of these tests in connection with parentage problems.*—All the known antigens of cattle erythrocytes are inherited, and in a very simple manner. Any one of the numerous bovine antigens, as A or F or Z, appears in an individual's blood only when present in the blood of one or both of its parents. Hence, any one or more of these antigens found in the blood of an individual but not in the blood of the putative parents is grounds for illegitimacy. The usual problem is one of deciding which of two or more bulls could *not* be the sire of a particular calf whose parentage is questioned. Those blood factors of the calf not found in its dam must be inherited from its sire. The bull, or bulls, which lack any one or more of the critical antigens is excluded as the sire of the calf. Most but not all of these cases can be settled by the blood-typing tests.

In addition to making use of the bovine blood-typing tests in connection with parentage problems arising in registration, the Dairy Breed Association now require that all registered bulls whose semen is being used in artificial insemination must have their blood-types on record. (Virtually all of the blood-typing work in connection with the program of the Dairy Breed Association is presently being done by Dr. L. C. Ferguson and co-workers of Ohio State University. The School of Veterinary Medicine of the University of California is now in the process of developing an adequate battery of bovine blood-typing reagents. It is expected that we will be ready to accept samples for parentage analysis sometime during the coming year. Cattle breeders interested in having such tests made should be advised to contact the secretaries of their respective breed associations.)

3. *The use of these tests in studies of cattle twins.*—Biologically speaking, twins are of two distinct kinds according to their zygotic origin, namely, monozygotic twins, arising from a single fertilized egg, and dizygotic twins, each arising from a separate zygote. The former, having exactly the same genetic constitution and often resembling each other more so than do the left and right sides of a single individual, are valuable animals for research purposes. The latter, having different genetic constitutions, are no more alike, genetically, than are full brothers and sisters born as singletons. It is at once obvious that opposite-sexed twins are dizygotic twins. The problem, then, is one of deciding by all the available criteria which like-sexed twins are monozygotic in origin. This is largely a problem of eliminating the like-sexed twins of dizygotic origin. It was assumed at the outset that the bovine blood-typing tests would be an invaluable criterion in the diagnosis of monozygotic twins, since most full sibs (not twins) could be readily differentiated on the basis of blood types alone. The results of the blood-typing tests in this connection were extremely disappointing. Contrary to expectation, most opposite-sexed twins, as well as those of the same sex that were obviously dizygotic, turned out to have identical blood types. The reason for the unexpectedly high proportion of identical blood types in these otherwise genetically dissimilar twins was discovered by Dr. R. D. Owen, now at California Institute of Technology. Owen demonstrated that identical blood types in most cattle twins are the result of blood admixture which stems from the time the twins had a common circulatory system during embryonic development. (Anastomosis of the chorionic blood vessels of bovine twin fetuses occurs in approximately 90 per cent of the cases.) Evidence for the blood admixture in bovine twins is obtained by a clear-cut separation, by serological methods, of the two kinds of erythrocytes comprising the admixture. To this phenomenon Owen gave the name "erythrocyte mosaicism." The blood admixture persists throughout the life of such twins. It is postulated that the primordial blood cells, the progenitors of hemopoietic tissues, become admixed as well as the functional elements of blood. Each twin, then, forms erythrocytes from not only its own hemopoietic tissues but from those arising from the transplantation of primordial cells from its co-twin. Since the ratio of the two kinds of erythrocytes comprising the mosaic is always the same in each of the twins of a pair, it is not possible to determine by the serological tests which of the two kinds of erythrocytes arose from a twin's own tissue rather than from the transplanted cells. Genetically, however, such twins only transmit to their offspring the genes for the antigens of their own blood. Hence, the differentiation can be made by a study of the offspring.

Bovine blood typing tests are rather useful in the separation of monozygotic and dizygotic

(Continued on page 28)

MASTITIS CONTROL IN CALIFORNIA*

By FRANK L. PELLISSIER, *Pellissier Dairy Farms*

Dairymen and veterinarians are equally interested in the extent and control of mastitis in our state.

The dairy cow population in our state is over 900,000 cows and an estimate of the presence of mastitis in dairy cows is reported to be between 25 and 40 per cent, and this would indicate that probably 300,000 dairy cows in our state have been exposed to or are harboring bacteria which may cause mastitis; the financial importance to the dairyman is obvious when cows are worth from $300 to $500 each, thereby jeopardizing over $30,000,000 of dairymen's property. We all know that the presence of mastitis reduces the production of cows from 10 per cent to more than 20 per cent and even though this loss in production may not appear great, it still is great enough to bring the cow's efficiency below the point of returning a profit to her owner.

In some areas there are probably quite a number of veterinarians who have not had the opportunity or occasion to test and treat cows for mastitis from the beginning of a test through the first treatment and on to the final treatment and in addition retest to check whether the treatment was entirely successful.

In too many instances veterinarians are busy in handling emergency cases or are busy vaccinating calves for brucellosis control and in addition may conduct a small animal practice, making it physically impossible to agree to treat cows for mastitis on the farms where the treatment would require the presence of the veterinarian every twelve hours for two or three days, depending on the treatment indicated.

I venture another reason the veterinarians have not been seeking this type of work is that treatment is relatively expensive, not so much because of the material used in the treatment, but from the number of hours necessary for the treatment and we believe also that some dairymen may have avoided this type of work because of its expensive nature.

In our experience in the dairy field we have found that dairymen have to be rather resourceful and always attempt to work out their own salvation. This is especially true in the case of mastitis. Dairymen have been treating their cows, probably on a "hit or miss" basis, after hours, and after dark with penicillin or other materials, and, to our surprise, the results they have been getting have been fairly satisfactory. However, some dairymen have experienced disastrous results, not only failing to cure the animal, but in some instances death of the cow has occurred.

We, as dairymen, are hoping to stimulate more active interest on the part of the veterinary profession in the great field of work yet to be accomplished in mastitis control. We believe there should be greater interest and study of the problem and we believe treatment for mastitis should be conducted either by the veterinarian, or under his very exacting supervision, that the results of the treatment might be followed closely and proper interpretation given. It is agreed by most of us that the average layman is unable to interpret the results or ramifications in the treatment for mastitis and it is possible that much valuable information has been lost and not recognized by the dairyman, and consequently has not been tabulated for intepretation by people who could evaluate the results.

We are indebted to the University of California for the outstanding contributions in research they have made in mastitis control but we believe this research should be supplemented and tried to a greater extent in the field by practicing veterinarians with the view of making further advances in the knowledge, treatment and technique of handling mastitis.

A few years ago a number of dairymen in the Los Angeles area allied themselves with the view of testing their cows for mastitis and applying some of the knowledge that had been developed by the University. It is unfortunate such groups were not working closely with the veterinary profession, or the veterinary profession was too busy in other projects resulting in much time having been lost. It is our hope that dairymen will have the advantage of the wholehearted interest of the veterinary profession in assisting in solving the problem that means so many dollars in cows and in milk production.

A "Brucellosis Study Committee" some 15 or more years ago was set up in California under the leadership of Joe Hart, Farm Bureau Dairy Department, and Sam Greene, Dairy Council Secretary, and that committee has worked through all these years contributing much to the advancement of knowledge and has further assisted in planning the brucellosis control program. Probably the biggest step in that direction, outside of the dairy research, has been the participation of the veterinary profession in the vaccination of 800,000 calves—the dairymen have profited from this program and we believe the veterinary profession has also.

It appears a great benefit might accrue to dairymen and herdsmen from training obtained from the practicing veterinarians in the technique and sanitary practices necessary in the prevention and treatment of mastitis.

The need now is even greater and progress must be made. *Progress is in your hands—the obligation is yours.*

*Presented June 26, 1951, at the 63rd Annual Convention of the California State Veterinary Medical Association.

Bovine Reproductive Failure

By T. Y. TANABE, Ph.D.*

The purpose of this study was to determine the relative importance of fertilization failure and embryonic mortality as causes of "repeat breeding" in cows having no gross manifestations of genital abnormality. The study included 104 cows, 49 Guernseys and 55 Holsteins, each of which had been bred from 4 to 13 times without conceiving.

Visible genital abnormalities, not detected on clinical examination, were found in 10.6 per cent of the cows when slaughtered. Incidence was higher in the Holsteins, 18.2 per cent, than in the Guernseys, 2.0 per cent. The abnormalities were grouped as follows: bilateral tubal, 1.9 per cent; unilateral tubal on the ovulating side, 3.9 per cent; unilaterial tubal on the non-ovulating side, 1.9 per cent; and failure of ovulation, 2.9 per cent.

Fertilized ova were found in 66.1 per cent of cows slaughtered three days after breeding, but in only 23.1 per cent of those slaughtered 34 days after breeding, indicating an embryonic death rate of 65.1 per cent. Estrus recurred in 50 per cent of cows scheduled for 34th-day slaughter; 15.4 per cent had abnormal embryos; and 11.5 per cent had no embryos but had not returned to estrus.

Estimates were made of the effect of the following factors on fertilization and embryonic death rate: (1) breed; (2) brucellosis; (3) number of previous services; (4) number of previous calvings; (5) herd size; and (6) herd breeding index. The only statistically significant item found was the breeding index of the herd from which the cow came.

This group of 104 cows may be divided into three main categories on the basis of reproductive performance during the first 34 days after breeding: (1) failure of fertilization, 39.7 per cent; (2) embryonic abnormalities and mortality before the 34th day, 39.2 per cent; and (3) embryos still normal at 34 days, 21.1 per cent.

*Summary of talk given at CSVMA convention, June 26, 1951. Dr. Tanabe is Assistant Professor, Department of Animal Husbandry, at Pennsylvania State College, and Semen Physiologist of Kirkhoff Laboratory of Biology at California Institute of Technology.

Applicants

Darr Jobe, Temple City, Vouchers: W. J. Zontine, Joseph Arburua.

Max Colton, Puyallup, Wash., Vouchers: Norman Freid, Albert Chafets.

C. E. Wicktor, president of the California State Veterinary Medical Association, has been chosen to act as president for the Kansas City Veterinary College Alumni Association for 1951-52.

Surgical Exercises On An Equine Pseudohermaphrodite

By JOHN H. WOOLSEY, JR., DVM, Davis, Calif.

A two-year-old brown filly was presented at the University of California Veterinary Clinic on June 16, 1950. The owner was concerned over the appearance of her genitalia when she urinated.

Examination disclosed an enlarged clitoris which was everted on urination. The urethral meatus was on the floor of the vagina, as in a normal mare, but the vagina was a closed sac. The clitoris was removed at the owner's request, and after removal of stitches the filly was sent home.

The filly was again presented on February 10, 1951, with the complaint that she was becoming unmanageable when ridden with other horses, and acted very much like a stallion. On rectal palpation, a mass was found in the right lower region of the peritoneal cavity, and identified as a testicle. After chloral hydrate anesthesia, the peritoneal cavity was entered through the right flank. The vas deferens was followed from the neck of the bladder to the testicle, which was loosely attached near the inguinal ring. The testicle was removed after ligation of the spermatic artery. A search was made for the left testicle, but no definite structure could be palpated or exposed. The incision was then closed in four layers, using silk except for the skin, where wire was used.

The animal was sent home for further observation, and was returned at the end of the month with the same complaint. A left inguinal approach revealed a small flabby testicle loosely attached near the internal inguinal ring. This was removed with the aid of an emasculator, the canal packed with sterile gauze, and the skin sutured to hold the pack, which was removed after 48 hours. The mare was sent home after seven days, and has now become a very tractable riding horse.

Upjohn's Office Pamphlet

The secretary's office is in receipt of a 4-page pamphlet on the care of dogs. This is published by the Upjohn Company. Its title is "A Few Hints, Suggestions, and Facts That May Assist You in Choosing and Caring for a Puppy."

It is intended for veterinarians to keep in their reception room for their clients to take. It contains basic information, it is ethical, and we believe it will answer many questions which would otherwise be asked of the doctor.

This pamphlet may be obtained in any quantity from any branch of the Upjohn Company by telephoning or writing.

Report of Delegate to House of Representatives

AMERICAN VETERINARY MEDICAL ASSOCIATION, Milwaukee, Wisc., August 20-23, 1951

The House of Representatives convened on August 18, 1951, at the Schroeder Hotel, Milwaukee, Wisconsin.

Several applications had been received from graduates of foreign veterinary colleges. Among those received were applicants from the Middlesex School who had obtained degrees from European schools. These applications were held in abeyance awaiting further information.

The question was raised relative to recognizing veterinary colleges that were not headed by deans who were veterinarians. It was decided that deans of veterinary colleges must be graduates of approved veterinary colleges in order to have their colleges approved by the American Veterinary Medical Association.

The Tuskegee Institute asked for recognition to establish a student chapter of the American Veterinary Medical Association. Recognition was granted.

An employment benefit plan for the staff of the American Veterinary Medical Association was inaugurated. The annual cost of this plan will be approximately $4,500. It was felt that such a plan was necessary because of the huge turnover in staff members. This turnover was attributed to a lack of security for employees.

The AVMA executive officers were reemployed with the exception of the editor-in-chief. This position has been filled on a temporary basis since the resignation of Doctor R. C. Klussendorf. Negotiations for the employment of a permanent editor-in-chief are in progress.

The membership of the AVMA as of August 1, 1951, was 11,160, a net gain of 837 members during the year.

For several years the AVMA has been operating on a deficit budget. The deficit has not exceeded $200 to $400 annually. A proposal for an increase in dues was presented. Suggestions for increases ranged from $5 to $10 annually. This matter was held over for further study.

The veterinary profession is moving toward specialties in various lines. Two of the specialties thus far have been approved by the AVMA Specialties Board; namely, the American College of Veterinary Pathologists and the American College of Veterinary Public Health. To become a member of any of the various specialties, the examining board must see that the candidates are: (a) prepared for examination; (b) pass a comprehensive test; (c) are competent to be so classified.

Finances of the International Veterinary Congress have never been on a sound basis. Study is now in progress to have the national veterinary organizations make payment to the congress on the basis of their membership. The per capita cost has not been determined.

It has become urgent that the AVMA have representation in Washington, D. C., due to the introduction of bills that affect the veterinary profession. A maximum appropriation of $2,500 per year was allocated for this purpose.

Four amendments to the constitution were adopted. These amendments were for the purpose of clarification. They dealt with the definition of general membership, life membership, student chapter membership, and the definition of state, territorial, and provincial associations.

Numerous proposals for amending the administrative by-laws were presented. These will come up for final adoption at the convention next year.

These proposals define active members, election to active membership, publication of applicants' names in the journal (once if within the limits of constituent associations and twice if outside the limits of constituent associations), requirements for approval of colleges from which applicants are graduated, individuals entitled to receive the journal, the relationship of constituent associations and the AVMA in accepting and dropping members, student chapter membership, student chapter members who apply for AVMA membership, method for speeding up the election of executive board members, responsibilities of the assistant executive secretary, i.e., to share the responsibilities with the executive secretary, invitations for annual conventions be presented to the House of Representatives at least two years before the meeting is to be held, and that proposed amendments be published in the journal in lieu of being presented in writing.

A resolution adopted by the Georgia Veterinary Medical Association was read regarding the eradication of hog cholera from the United States. No official action was taken on this resolution. However, a similar resolution had been adopted by the United States Livestock Sanitary Association and they were commended for their action.

A resolution proposing that the AVMA own its own quarters and a method for financing this plan was presented. This resolution was rejected.

A resolution suggesting that the AVMA buy its own printing plant was rejected.

A resolution was adopted to commend the American Medical Association for opposing federal aid to medical schools.

A resolution was adopted which opposed federal price controls.

(Continued on page 28)

HISTORY OF FORMAL VETERINARY EDUCATION*

By JOSEPH M. ARBURUA, D.V.M.

(Continued from May-June issue)

American Development

During this period, what was being done in the United States and Canada concerning veterinary education? Absolutely nothing. From a veterinary point of view, we were backward children of a backward British mother.

The first mention of a veterinary college was in 1806, when Dr. Benjamin Rush recommended to the Pennsylvania Agricultural Society that a veterinary college be established in the University of Pennsylvania. In order to appreciate this, one must remember that Dr. Rush was one of the signers of the Declaration of Independence, had been secretary of the mint and one of the outstanding medical men of his time. He had just returned from abroad and had an opportunity to visit Alfort, where he was favorably impressed. No action, however, was taken on his recommendation. As a matter of fact, it was not until 1884, 78 years later, that the veterinary school in the University of Pennsylvania was established and Dr. Rush Shippen Huidekoper, a grandson of Dr. Rush and a graduate of Alfort, was made its first dean.

During the years of 1850-1860 several feeble efforts were made to inaugurate veterinary education in the United States. These projects died an early death and so far as practical results are concerned, may be passed over lightly, except that they served as a voice calling in the wilderness.

In 1850 Robert Jennings of Pennsylvania, a self-educated man, started the Pennsylvania Veterinary College, but ran into difficulties. He sought assistance to establish a school of veterinary medicine in Philadelphia and in 1852 secured a charter for the Veterinary College of Philadelphia. The only graduate veterinarian on the faculty was John Scott. Due to dissensions this project failed, but in 1857 Jennings again attempted to organize the school. Again, after three years, internal strife ended his efforts.

Undaunted, Jennings attempted a second reorganization, actually the third attempt, in 1866, this time calling the school the "Philadelphia College of Veterinary Surgeons," but students were not attracted and in 1870 a man by the name of McClure took control. McClure was an unscrupulous scoundrel and sold diplomas to any one who had the price, forging names on the documents. For this he served a term in the penitentiary. It is not known how many so-called graduates this school had, but only eight names can be found in veterinary literature.

It will be noticed that we have gone beyond the decade under discussion, but this is done for the sake of clarity and to avoid confusion.

In 1851 Mason and Turner announced the opening of a veterinary school in Montreal, but nothing came of it. Turner was a graduate of Edinburgh.

In 1854 the "Boston Veterinary Institute" obtained a charter through the efforts of D. D. Slade of that city. He organized a faculty including himself as president, George H. Dadd, A. S. Copeman and Charles W. Wood.

Slade, a physician, was a man of learning, having traveled in Europe and purportedly had attended a series of lectures at the Alfort Veterinary College. Dr. Dadd held an M.D. degree and about 1845 had turned to veterinary matters. He was a prolific writer and in 1851 started the "American Veterinary Journal," the first veterinary journal in the United States. Copeman was a self-taught veterinarian. Wood also was a self-made practitioner but was a scholar, highly ethical and highly respected.

Wood was undoubtedly the outstanding individual in this group, though Dadd seemed to be the administrator. Wood could not agree with Dadd in many of his policies, particularly in the choice of students. The latter was prone to take any candidate who could afford the price of the tuition, regardless of mental or educational standards, whereas Wood insisted on students of character, intelligence and a good basic education.

Three years after its founding, Wood resigned and the school closed after four sessions. It is not known how many men passed through this school, but four of its graduates later became presidents of the United States Veterinary Medical Association indicating that, however limited, veterinary education was bearing fruit.

Again in this decade, another effort to establish formal veterinary education in this country was made. This time, though the first effort was a failure, persistence eventually succeeded.

A group of seven men, including three physicians and led by William Cooper, requested a charter for the New York College of Veterinary Surgeons in 1856. In April, 1867, the charter was granted but the project failed before classes were started. Nevertheless, the faculty organization remained still hopeful, and in 1864 actually opened to classes with Captain Ralston, principal, and John Busteed, M.D., professor of surgical anatomy and surgery. Captain John Campbell Ralston, M.R.C.V.S., was actually the originator of the idea.

In Canada in the meantime, 1857 to be exact,

*Presented at the Midwinter Conference of the California State Veterinary Medical Association, January 27, 1951.

the "Canadian Agriculturist" urged the farmers of Canada to endow a veterinary college. This was the first evidence of agricultural interest in veterinary education in the English speaking countries of America.

At this point I should like to add parenthetically, that the first actual veterinary school of accepted standards in the western hemisphere was that established in 1850 in the University of Mexico.

In 1860 Dr. Alexandre F. Liautard, a native of France and a graduate of Toulouse, came to New York and established a private practice. Three years later he met Dr. Busteed of the embryo New York College of Veterinary Surgeons, at the first meeting of the United States Veterinary Medical Association. The latter employed him as professor of anatomy and thus entered into the field of education the man who brought veterinary education out of the wilderness and established it on a solid foundation.

In 1864 classes were opened to students and the first class was graduated in 1867. There were two graduates.

Affairs did not run smoothly, however, due to a struggle for existence and internal dissensions. In 1868, although he had no voice in the management, Liautard, a shrewd business man and a natural leader, became the dominant figure of the school. This intolerable condition lasted until 1875 when Liautard withdrew with others of the faculty and all of the students and established the American Veterinary College in New York. This school graduated its first class of 16 men the following year.

In 1877 another similar withdrawal from the New York College of Veterinary Surgeons occurred, and the Columbia Veterinary College was established.

The separation of the New York College and the American College finally came to an end when the two were amalgamated as a department of New York University in 1899. Liautard retired the following year and returned to France.

Canada—19th Century

During the 60's, two schools were founded in Canada; the Toronto Veterinary College by Andrew Smith and Montreal Veterinary College by Duncan McEachran, both graduates of Edinburgh. The Toronto, later to become the Ontario Veterinary College, was established in 1862 under the sponsorship of the Provincial Agricultural Society, turning out three graduates in 1866. This was actually a year before the New York College of Veterinary Surgeons was to have any graduates. This school is still in operation and has qualified more veterinarians than any other college in the western hemisphere. As far back as 1935 she already had 4395 graduates.

The Montreal Veterinary College, later called the Faculty of Comparative Medicine and Veterinary Science of McGill University, was established in 1866, graduating three men in 1869. This school commenced as a three-year school. Except as will be noted, it was many years before a similar course was given by other schools.

First State Veterinary School

1868 saw the founding of the first state veterinary school in this country. That year the veterinary school of Cornell University was organized and James Law, likewise of Edinburgh, was made dean. This was a four-year school, leading to the degree of Bachelor of Veterinary Science. Law was an able instructor, but his efforts were mainly bent in writing for agricultural journals and generally educating the farmer. The influence of this school was negligible until the turn of the 20th century, since, 25 years after opening she boasted of only four graduates. In 1893 the school was reorganized as the New York State Veterinary College of Cornell University.

The period following the establishment of the schools already mentioned, blossomed out with both private and state schools. Among the former appeared Iowa State College Division of Veterinary Medicine (1879), Harvard University School of Veterinary Medicine (1882), University of Pennsylvania School of Veterinary Medicine (1884), Ohio State College of Veterinary Medicine (1885), etc. Among the private schools were Northwestern Veterinary College (1881), Chicago (1883), Baltimore (1889), Kansas City (1891), Indiana, and McKillip (1892), etc.

By the turn of the century veterinary schools were to be found in every section east of the Rocky Mountains. Some were good and some were mediocre, while others were veritable diploma mills. Even veterinary correspondence schools granting diplomas appeared.

(To Be Continued)

Foreign Journal Review

Rumney, W. Y., and Schofield, F. W. (1950): "Pulmonary Hypertropric Osteo-Arthropathy" (Marie's disease). *Canadian Journal of Comparative Medicine and Veterinary Science,* Vol. 14, No. 12, pages 385-387.

The authors describe a rare case of Marie's disease in a Springer Spaniel. It was a typical case with:

1. Sub-periosteal formations of cancellated bone affecting the extremities.

2. The bony lesions of the limbs exhibiting a peculiar symmetry.

3. The co-existence of pulmonary growth.

The work has 7 pictures. They show the enlargement of the limbs, the characteristic exostoses, the location of the tumor in the lung and the microscopical changes in the affected organs.

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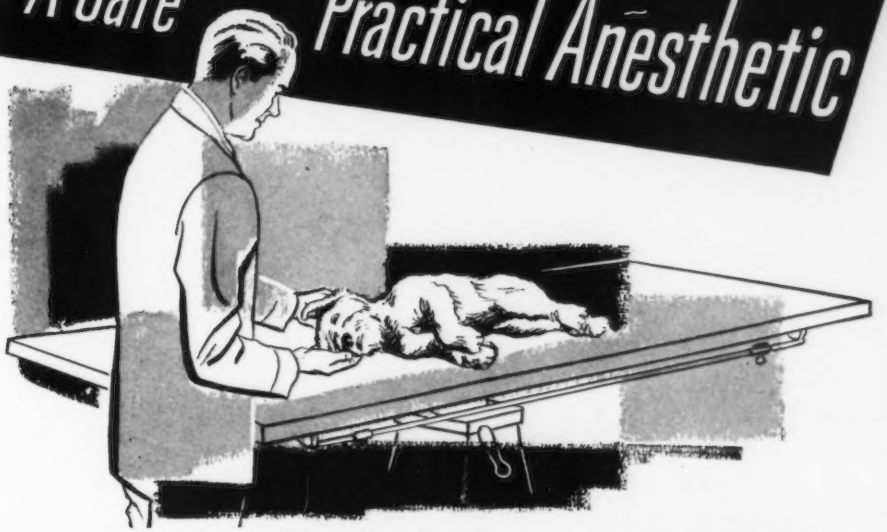

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53 YEARS OF SERVICE TO THE VETERINARY PROFESSION

Report of Delegate to House of Representatives

(Continued from page 24)

A resolution was adopted which commended the National Broadcasting Company for calling public attention to the importance of animal health.

A resolution was adopted which commended the work of groups and individuals in making the convention a success.

A resolution was adopted to commemorate the debt of gratitude the association owes its deceased members.

A new directory for the AVMA will be ready for distribution early in 1952.

The annual meeting of the AVMA will be held next year at Atlantic City, New Jersey, on June 22-26, 1951.

C. E. WICKTOR, D.V.M.,
Delegate, State of California.

Blood Groups in Livestock Production

(Continued from page 21)

twins despite the frequent occurrences of identical blood types. Like-sexed twins with distinctly different blood-types, as well as those having identical blood types as a result of embryonic blood admixture, are obviously dizygotic in origin. Where all other criteria agree, those twins having identical blood types without any evidence for erythrocyte mosaicism may be assumed to be identical. Erythrocyte mosaicism has also been demonstrated in triplets and quadruplets, and here again these same criteria apply in the diagnosis of those sets of monozygotic origin.

4. *The diagnosis of the freemartin by means of the blood-typing test.*—The freemartin is defined herein as a sterile heifer born co-twin with a bull. About nine out of ten heifers born co-twin with a bull are freemartins. The fundamental basis for the development of a freemartin is the same as that which gives rise to blood admixture in twins, namely, a common circulatory system during embryonic development. Accordingly, the demonstration of erythrocyte mosaicism in opposite-sexed twins is an indirect method of diagnosing the freemartin. The heifer having a distinctly different blood type from that of her bull co-twin is considered to be normal. (Since we are now in the process of collecting data on the accuracy of this method of diagnosing the freemartin as well as the incidence of distinctly different blood types in opposite-sexed twins, this laboratory will make these tests without charge. Please address all correspondence regarding such tests to the author.)

Other applications or projected applications of the bovine blood-typing test in connection with cattle breeding programs are not given in this report. Space does not permit the inclusion in this report of some of the interesting findings and fundamental applications of the study of blood groups of other species, such as sheep and poultry.

OPPORTUNITIES

For Sale

Practice in lovely Southern California residential town. Gross $40,000. Includes large 6-room house. $5,000 will handle for the right man. Dr. R. L. Griffith, 515 W. Commonwealth Ave., Fullerton, Calif.

Small animal hospital including real estate, fully equipped with accommodations for 53. Located on main street in thickly populated area in Orange County. This business was established 20 years ago and is a money maker. Inquire Care of Mr. Charles S. Travers, 3004 16th St., Room 208, San Francisco 3, Box 1-C.

* * *

For Sale, Lease or Rent

Old established practice to California licensed veterinarian, large animal practice, also small animals, fully equipped hospital, kennels, etc. Lovely furnished house, 2 acres in walnuts. Reason for selling: old doctor deceased, young doctor drafted. Newman Veterinary Hospital, phone 610, Newman, Calif.

* * *

For Sale, Partnership, or Lease

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* * *

Opening

California licensed veterinarian wanted: To conduct one-man dog and cat hospital on salary plus commission or percentage basis, or will lease. Suburb of Los Angeles, Box 1-B, c/o Charles S. Travers, THE CALIFORNIA VETERINARIAN.

Assistant Wanted—Full time assistant needed for mixed practice in Coos Bay, Oregon. Please write details to Dr. J. H. Bennett, P. O. Box 58, Coos Bay, Oregon.

Vaccinate Lambs

Much of the risk associated with feeder lambs can be eliminated by having the young animals vaccinated against enterotoxemia and by close attention to several important points in management, the American Foundation for Animal Health reported in December.

In lots where lambs have been properly vaccinated against enterotoxemia, usual losses have been sharply reduced, authorities report.

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Oderkirk, C. C., Long Beach
Ogburn, L. L., Fresno
O'Harra, J. L., Reno, Nev.
Olsen, Robert, Oakland
Olson, P. C., Los Angeles
Ommert, Willard, Hollydale
Ormsbee, Robert, Stockton
Orsborn, John, Jr., Half Moon Bay
Osebold, John, Davis
Ott, H. I., Norwalk
Outhier, C. B., Salinas
Ozanian, C. H., Bellflower
Pace, J. C., El Centro
Padfield, C. J., La Mesa
Padfield, E. T., La Mesa
Palmer, C. R., Palo Alto
Papineau, William, Burbank
Parker, Horace, Balboa Island
Parrish, R. D., Porterville
Parshall, C. J., San Francisco
Pastor, John, Hollywood
Paul, E. W., Redwood City
Payen, L. J., Sacramento
Pearson, E. N., West Los Angeles
Peetz, C. J., Corte Madera
Perry, J. K., Palo Alto
Petersen, William, Lodi
Peterson, Ellis, Aptos
Peterson, I. A., Pasadena
Pfaffman, G. A., Redding
Philbrick, R. E., Riverside
Phillipson, Murray, Las Vegas, Nev.
Pike, Burton, Long Beach
Pike, L. E., Long Beach
Pollack, Murray, Cleveland Ohio
Poston, Walker, Berkeley
Powers, Kenneth, Los Banos
Preusser, Richard, Orland
Priddy, C. W., Oakdale
Priest, B. N., Bakersfield
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Putney, W. W., Van Nuys
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Ramsdale, Philip
Ranney, C. L. Garden Grove
Raskin, Henry, Detroit, Mich.
Rebold, G. P., Berkeley
Reddert, F. E., Santa Cruz
Reddick, Harry E., Jr., Dos Palos
Reid, C. H., Hollywood
Reiner, G. E., Sacramento
Rey, R. S., Del Mar
Rice, James, Redding
Richelieu, Fred, San Rafael
Richter, R. E., San Jose
Riddell, W. K., Los Angeles
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Roberts, J. W., Berkeley
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Roberts, Seymour, Richmond
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Roesner, E. M., Grass Valley
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Simmons, G. M., San Francisco
Simpson, H. L., San Diego
Sisco, Ray, Tulare
Sjarring, Shirley, Woodland Hills
Skillen, D. R., Pasadena
Smallbone, George, San Bruno
Smith, C. C., Santa Cruz
Smith, K. F., Beverly Hills
Smith, M. J., San Diego
Smith, R. R., Torrance
Smith, S. M., Palo Alto
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Smelbaker, H. A., Oroville
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Sommer, H. L., San Francisco
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Spalding, R. S., Bakersfield
Splaver, David, El Monte
Sprowl, Raymond, Los Angeles
Stafford, C. D., Novato
Stansbury, R. L., Pasadena
Stansbury, William, Antioch
Stanton, Harlan, Des Moines, Iowa
Stanton, Jay, Galt
Stay, C. M., Gilroy
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Stiern, Richard, Bakersfield
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Stone, Perry, Sebastopol
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Taylor, Rex, San Jose
Taylor, T. F., Santa Barbara
Tew, A. C., Cheyenne, Wyo.
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Thomas, W. W., Merced
Thue, George M., Fullerton
Tietze, A. L., Bakersfield
Todorovic, Val, Watsonville
Tompkins, R. J., Oakland
Torgersen, H. E., Mountain View
Townsend, J. G., Loomis
Turkheimer, B., San Francisco
Twisselmann, N. M., Bakersfield
Upton, J. R., Arcadia
Vanderhoof, R. A., Woodlake
Vaughn, L. F., Modesto
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Walker, R. H., Pleasanton
Walker, Warren, Los Angeles

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION COMMITTEES

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Robert E. Philbrick, 6695 Magnolia Ave., Riverside.
Fred B. Pulling, Box 608, Atascadero.

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(Continued from preceding page)

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Ward, Victor, Santa Barbara
Warkentin, C. C., Fair Oaks
Warn, C. C., Gardena
Watson, B. C., Bakersfield
Wayland, Frank, Salinas
Weis, Joachim, Israel
Weston, R. S., Carmel
Whitaker, A. J., Manteca
White, Alfred, Jr., Santa Barbara
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White, C. A., Jr., Mesa, Arizona
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White, Leslie, San Bruno
Whitman, J. R., San Luis Obispo
Whitson, C. F., Richmond
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Wight, James B., Kealakekua, Hawaii
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Wilcox, K. R., Mesa, Ariz.
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Williams, Fred, Chico
Williams, George, Compton
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Williamson, W. W., Atwater
Willmore, J. H., San Anselmo
Wilson, G. M., South Pasadena
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Woodward, B. T.
Woodward, W. D., Mountain Home, Idaho
Woolsey, J. H., Davis
Worcester, W. W., Fresno
Worrell, G. W., Susanville
Wright, F. C., Santa Ana
Wyatt, D. H., Julian
Young, W. A., Chicago, Ill.
Zaks, S. Z., Stockton
Zontine, W. J., Lancaster

OFFICERS AND MEETING DATES OF LOCAL ASSOCIATIONS

NOTE: *Kindly notify the office of any changes or corrections.*

Bay Counties VMA

President, William W. Brimer.
Vice-President, R. P. Cope, 1205 San Pablo Ave., Berkeley.
Secretary-Treasurer, H. F. Carroll, 2024 Lombard St., San Francisco.
Sergeant-at-Arms, B. F. Murray.
Executive Board, Chauncey Miller, Irving Roberts.
Meetings, second Tuesday of the month.

Central California VMA

President, L. C. Witcosky.
Vice-President, I. G. LaRue.
Secretary-Treasurer, W. E. Smith, 516 Oatman, Sanger.
Meetings fourth Tuesday of the month.

East Bay VMA

President, George Eberhart.
Vice-President, Irving M. Roberts.
Secretary-Treasurer, Robert Clemens, 23352 Orchard, Hayward.
Meetings bi-monthly, fourth Wednesday.

Humboldt County VMA

President, Melvin P. Roberts.
Vice-President, E. R. Holland.
Secretary-Treasurer, H. E. Detlefsen, 450 5th St., Ferndale.
Executive Committee, S. A. Fuller, L. D. Meyers.
Meetings: January, May, September, December.

Kern County VMA

President, G. L. Dayman.
Secretary-Treasurer, Richard A. Stiern, 17 Niles St., Bakersfield.
Meetings first Thursday of the month.

Mid-Coast VMA

President, Fred B. Pulling.
Vice-President, J. R. Whitman.
Secretary-Treasurer, C. Edward Taylor, 2146 S. Broad St., San Luis Obispo.
Executive Committee, A. M. McCapes, Ben G. Collins.
Meetings, first Thursday of every even month.

Monterey Bay Area VMA

President, Charles C. Smith.
Vice-President, James Ebaugh.
Secretary-Treasurer, C. E. Taylor, 2146 S. Broad St., San Luis Obispo.
Executive Committee, Ralph Weston, Charles C. Smith, James Ebaugh.

Northern San Joaquin Valley VMA

President, F. W. Koebel.
Vice-President, A. J. Whitaker.
Secretary-Treasurer, Tom Hagan, Gen. Del. Escalon.
Executive Committee, Officers and R. A. Ball, W. A. Brown.
Meetings, fourth Wednesday of the month.

Orange Belt VMA

President, R. A. Brunson.
Vice-President, Joe Geierman.
Secretary-Treasurer, Clark Stillinger, 1742 E. Holt Ave., Pomona.

Orange County VMA

President, Mark Lindsey.
Vice-President, N. D. Cash.
Secretary-Treasurer, Donald E. Lind, 2643 N. Main, Santa Ana.

Peninsula VMA

President, A. J. Gutknecht.
Secretary-Treasurer, P. H. Hand, Box 1035, Millbrae.
Meetings, third Monday of the month.

Redwood Empire VMA

President, Mervyn Mahoney.
Vice-President, John Wion.
Secretary-Treasurer, John McChesney, 40 6th St., Petaluma.
Meetings, third Thursday of the month.

Sacramento Valley VMA

President, Paul D. DeLay.
Vice-President, T. J. Hage, U. C., Davis.
Secretary-Treasurer, S. M. Foster, 430 College, Woodland.
Meetings, second Wednesday of the month.

San Diego County VMA

President, Mitchell Smith.
Vice-President, N. W. Burg.
Secretary-Treasurer, Warren J. Dedrick, 904 So. Lemon, El Cajon.
Meetings, fourth Tuesday of the month.

San Fernando VMA

President, Carroll L. Hare.
Vice-President, Phillip McClave.
Secretary-Treasurer, Bradley Crundwell, 704 Roselli, Burbank.

San Francisco Veterinarians

President, H. F. Carroll.
Vice-President, N. T. Freid.
Secretary-Treasurer, E. S. Cooper, 3329 Balboa.

Santa Barbara-Ventura Counties, VMA

President, T. F. Taylor.
Secretary-Treasurer, Joe Ridgway, 1784 Thompson Blvd., Ventura.
Meetings, second Friday of even months.

Southern California VMA

President, D. H. McDole.
Second Vice-President, R. V. Jessup.
Secretary, Ray Sprowl, 11756 San Vicente, West Los Angeles.
Treasurer, L. B. Wolcott.
Executive Committee, Phil Olsen, M. H. Harvey, H. I. Ott.
Meetings, third Wednesday of the month.

Coming Meetings

California Wool Growers Assn. Convention, Palace Hotel, San Francisco, Oct. 31-Nov. 1, 1951.

California Cattlemen's Assn. Convention, Hotel Californian, Fresno, Dec. 13-15, 1951.

CSVMA Midwinter Conference, School of Veterinary Medicine, Davis, Jan. 28-30, 1952.

AVMA Convention, Ambassador Hotel, Atlantic City, Georgia, June 23-26, 1952.

The Contra Costa-Alameda Counties Women's Auxiliary will hold an evening birthday party at the Lake Merritt Hotel in Oakland in commemoration of the founding of their group one year ago November 2d. New officers of the group will be installed during this celebration.

AVMA Officers, 1951-52

President-Elect—W. L. Boyd, St. Paul, Minnesota.

President—John R. Wells, West Palm Beach, Florida.

First Vice-President—E. A. Grist, New Braunfels, Texas.

Second Vice-President—C. C. Rife, Atlanta, Georgia.

Third Vice-President—I. S. McAdory, Auburn, Alabama.

Fourth Vice-President—Dr. A. D. Glover, Canton, Missouri.

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1. Jensen, H. E.: Vet. Med., (In Press.)

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Awards Presented at AVMA Convention

Dr. A. H. Quin, Kansas City, Mo., was presented with the AVMA's National Award. Dr. Quin is vice-president and director of professional services of the Jensen-Salsbery Laboratories, Inc. Dr. Quin has been a member of the Public Relations Committee of the AVMA since 1944 and chairman of the committee since 1947. The citation pointed out the work he has done in helping to foster better public understanding of animal health and the role the veterinarian plays in protecting animal and human health; the citation also pointed to his work in bringing closer the relationship between the veterinary profession and the farm and livestock groups who have common interests. In similar capacities Dr. Quin has served as chairman of the educational committee of the Associated Serum Producers for ten years.

Dr. Redding S. Sugg, dean of the School of Veterinary Medicine at Alabama Polytechnic Institute, Auburn, Alabama, and state veterinarian of Alabama, was presented the International Veterinary Congress Award for helping to broaden educational opportunities in the south. The citation presented pointed to the work he began in 1947 which developed a program whereby students from states which do not have colleges of veterinary medicine may enroll in such colleges in other southern states, contribute financially to the school and enter practice in their own state; a similar plan was instituted for students of human medicine and dentistry. Dr. Sugg has served as president of the Alabama and Southern Veterinary Medical associations and is a member of the executive board of the AVMA.

The Annual Borden Award for research in dairy cattle diseases was presented to Dr. Louis A. Klein of Moylan, Pa. The citation pointed to Dr. Klein's work in tick fever control, calf scours, mastitis research and his contributions on pasteurization and basic improvement of public milk supplies. It pointed out that Dr. Klein has published 30 scientific articles dealing with all phases of milk sanitation and dairy cattle disease control. Dr. Klein is professor emeritus at the University of Pennsylvania.

The 1951 National Humane Act Award of the AVMA was presented to Burr Collett of Barstow, California, who has rescued dogs in the Mojave Desert and found homes for homeless dogs; he has conducted newspaper and radio campaigns to encourage kindness to animals. This award carries with it a $100 U. S. savings bond and engraved certificate. The California boy was selected for the top award from nominations submitted from all parts of the United States and Canada.

CSVMA Auxiliary Notes

Alameda-Contra Costa Branch—Celebrating the first birthday of the Alameda-Contra Costa Branch of the California State Veterinary Medical Auxiliary, a dinner will be held Friday, November 2, at the Lake Merritt Hotel in Oakland. Honored guests will be the husbands. At this time the newly elected officers will be installed in a brief ceremony by Mrs. E. V. Edmonds of Oakland, retiring state auxiliary president. These officers are: Mrs. F. E. Kling of Oakland, president; Mrs. H. A. Grell of Richmond, vice-president; Mrs. N. H. Casselberry of Berkeley, secretary; and Mrs. W. W. Brimer of Alameda, treasurer.

Mistress of Ceremonies will be the chairman of the event, Mrs. H. C. Burns of Piedmont. Others on the committee are Mrs. T. A. Berry of Berkeley, Mrs. M. L. Boevers of Lafayette, Mrs. H. A. Grell of Richmond, Mrs. I. M. Roberts of San Leandro, and Mrs. S. R. Roberts of Richmond

Reservations must be turned in to Mrs. Burns by October 20.

Officers, Women's Auxiliary AVMA, for 1951-1952

President—Mrs. C. E. Bild, Miami, Fla.

President-Elect—Mrs. H. S. MacDonald, Toronto, Ontario, Can.

First Vice-President—Mrs. Russell A. Runnells, East Lansing, Mich.

Second Vice-President—Mrs. L. R. Richardson, Ravenna, Ohio.

Third Vice-President—Mrs. Earl N. Moore, Trumansberg, New York.

Secretary—Mrs. C. M. Rodgers, Blandinsville, Ill.

Treasurer—Mrs. Charles C. Rife, Atlanta, Georgia.

Chairman, House of Representatives—Mrs. A. E. Coombs, Skowhegan, Me.

Recorder, House of Representatives—Mrs. Lewis H. Moe, Stillwater, Okla.

Retiring President—Mrs. Dennis Coughlin, Topeka, Kan. Is also a member of the Executive Board.

CSVMA Members Attend AVMA Convention

Noted among the 3140 registrants at the recent AVMA convention were the following from California: Dr. and Mrs. T. G. Beard, Dr. and Mrs. W. I. Dill, Dr. and Mrs. T. G. Hage, Dr. and Mrs. A. R. Inman, Dr. and Mrs. C. B. Miller, Dr. and Mrs. A. S. Rosenwald, Drs. C. E. Wicktor, E. E. Jones, J. A. Jones, L. G. Cook, Joseph Arburua, H. S. Cameron, Forrest Love, George Hart, L. M. Hurt, R. C. Shock, Lederle representative, L. G. Clark, N. M. Twisselman, N. H. Casselberry, Norman McBride.

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- No interruption of feeding schedule
- A single intramuscular injection induces protection one week following vaccination
- In a series of controlled tests, swine vaccinated with ROVAC and subsequently challenged were solidly immune to massive doses of pathogenic hog cholera virus. In a limited trial, swine were shown to be protected against the "1949 variant strain" of hog cholera virus
- A desiccated product that is stable at least one year.

*Trade-mark
**U. S. Pat. 2,518,978

[1]Koprowski, H.; James, T. R., and Cox, H. R.: Proc. Soc. Exper. Biol. & Med. 63:178 (1946).

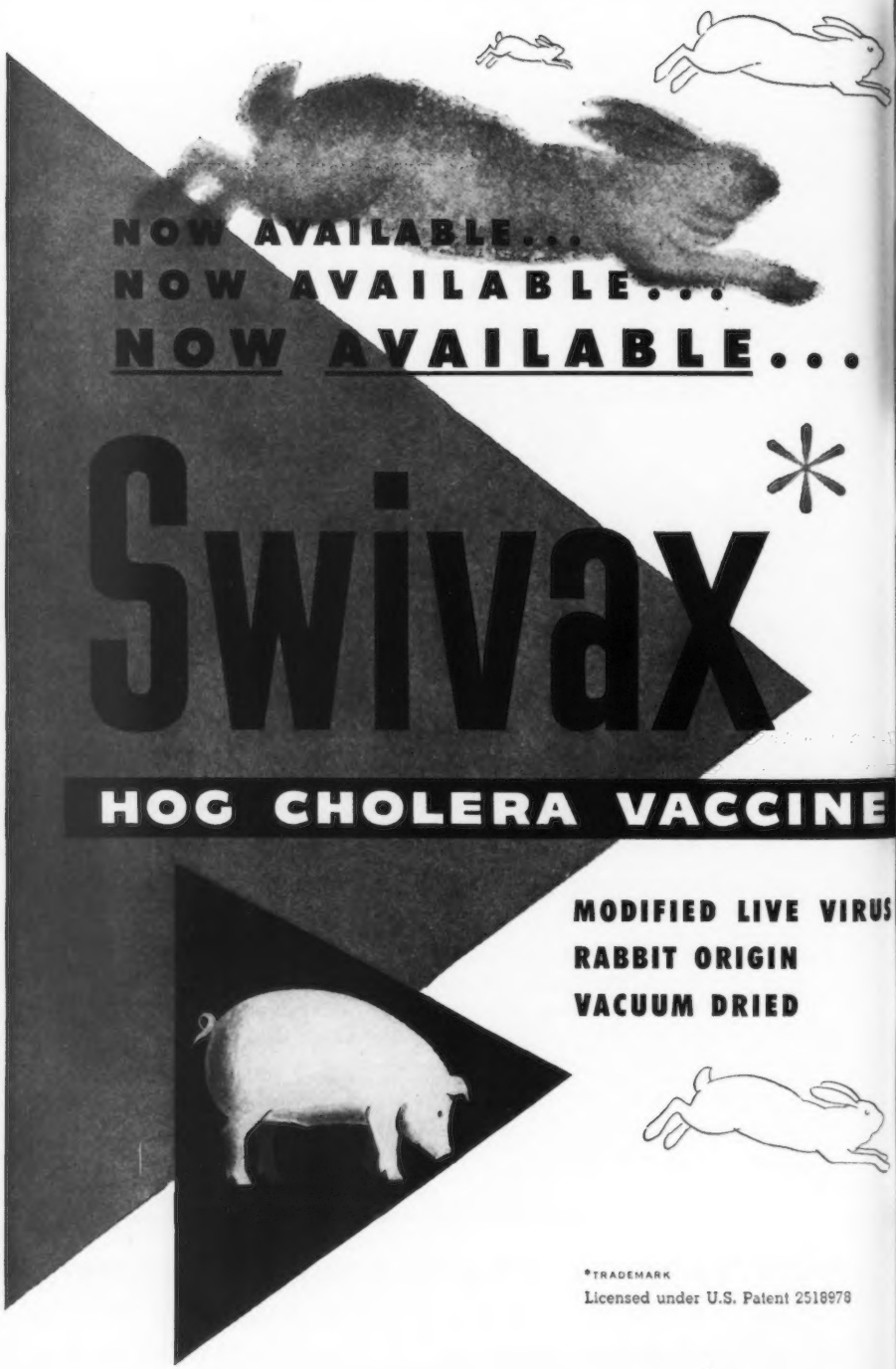
PACKAGES

5, 10, 25 and 50 dose packages of dried vaccine with diluent.

LEDERLE LABORATORIES DIVISION

AMERICAN Cyanamid COMPANY

30 Rockefeller Plaza New York 20, N. Y.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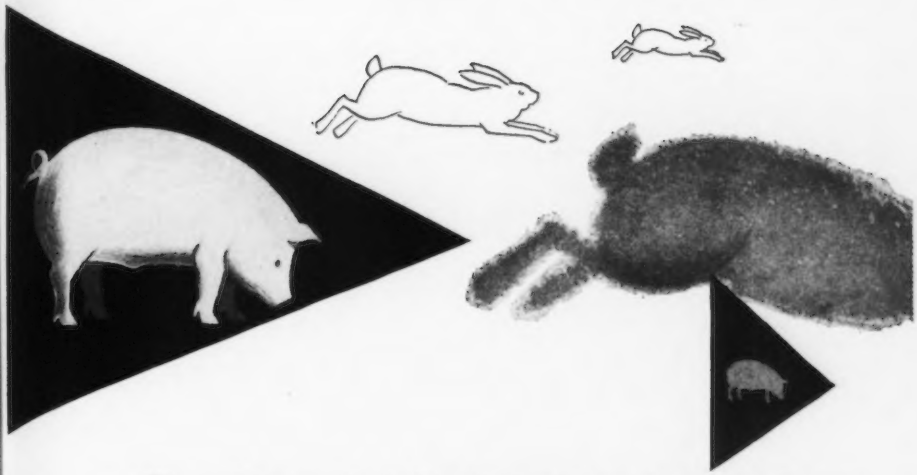

This new, single-injection vaccine requires no use of serum . . . provides solid immunity against hog cholera . . . yet, does not endanger other animals in the same herd.

SWIVAX is not just another hog-cholera vaccine. The virus used in the preparation of SWIVAX has been so *modified* (by more than 200 animal passages outside the natural host) that it is, in a sense, a new *form* of hog cholera virus—and one which is nonpathogenic to swine.

Full production has not yet been reached in the huge new laboratory constructed for SWIVAX production. However, adequate supplies should soon be available to meet the widespread demand.

SWIVAX is now available in 25-dose vials. Two additional package sizes, 5-dose and 50-dose vials, will be added later.

ALLIED LABORATORIES, INC.

Within this organization originated the policy of
SALES TO GRADUATE VETERINARIANS ONLY

POSTMASTER—Return postage guaranteed by California State Veterinary Medical Assn., 3004 16th Street, San Francisco 3, California. If forwarded to a new address notify sender on Form 3547. Postage for notice guaranteed.

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contain 23.5 mg. Anthelin
and .5 cc. Toluol
25 capsule bottle, $1.40

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for dogs 6 to 10 pounds
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and 1 cc. Toluol
25 capsule bottle, $2.60

Anthol No. 3
for dogs 11 to 20 pounds
contains 94 mg. Anthelin
and 2 cc. Toluol
25 capsule bottle, $4.35

Anthol No. 4
for dogs over 20 pounds
contains 141 mg. Anthelin
and 3 cc. Toluol
25 capsule bottle, $5.60
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